16. (Currently Amended) A high voltage semiconductor component, comprising:

a semiconductor body having a high voltage region [~~with the high voltage semiconductor component~~] and having an edge region of said high voltage region, a high voltage resistant structure at said edge region having at least one inner zone of a first conductivity type adjacent to a first surface of said semiconductor body;

a cell field including a plurality of individual high voltage components in said high voltage region, said high voltage individual components being connected in parallel and arranged in individual cells;

at least one floating guard ring of a second conductivity type arranged in said inner zone, said at least one floating guard ring surrounding said cell field [~~the high voltage region~~]; and

at least one inter-ring zone [~~zones~~] of said first conductivity type respectively arranged in said inner zone, [~~said inter-ring zones being allocated in pairs to each of said floating guard rings,~~] said at least one inter-ring zone [~~zones~~] being arranged adjacent said at least one [~~laterally such that they separate two respective consecutive~~] floating guard ring [~~rings from one another~~],

[~~wherein~~] said at least one [~~of said~~] floating guard ring [~~rings~~] and said at least one inter-ring zone [~~zones~~] have at least one of conductivities and geometries set such that their free charge carriers are totally depleted when a blocking voltage is applied.

Claims 17, 18 and 19 have been canceled.

20.(Currently Amended) The high voltage semiconductor component as claimed in claim 16, wherein said at least one floating guard ring has [~~rings have~~] one of a U-shaped or V-shaped cross-section.

21.(Previously Amended) The high voltage semiconductor component as claimed in claim 16, further comprising:

at least one space charge zone stopper located at an outermost edge of said edge region of said semiconductor component.

22.(Previously Amended) The high voltage semiconductor component as claimed in claim 21, wherein said space charge zone stopper comprises a heavily doped region of said first conductivity type, said heavily doped region being arranged in said inner zone.

23.(Previously Amended) The high voltage semiconductor component as claimed in claim 21, wherein said space charge zone stopper comprises a damage implanted region being arranged in said inner zone.

24.(Previously Amended) The high voltage semiconductor component as claimed in claim 21, wherein said space charge zone stopper comprises an electrode connected to said inner zone, said electrode being one of metallic or containing polysilicon.

25.(Previously Amended) The high voltage semiconductor component as claimed in claim 16, further comprising:

at least one magnetoresistor located at an inner edge of said edge region of said semiconductor component.

26.(Previously Amended) The high voltage semiconductor component as claimed in claim 25, wherein at least one of said magnetoresistors is simultaneously a gate electrode of said semiconductor component.

27.(Previously Amended) The high voltage semiconductor component as claimed in claim 25, wherein at least an outermost of said magnetoresistors is nearly completely enclosed by a cathode metallization in a direction of said first surface of said semiconductor component.

28.(Previously Amended) The high voltage semiconductor component as claimed in claim 27, wherein said cathode metallization is a metallization of a source electrode of said semiconductor component.

29.(Currently Amended) The high voltage semiconductor component as claimed in claim 16, wherein said at least one inter-ring zone [~~zones~~] in said edge region has [~~have~~] a cross-section tapered to said first surface.

30.(Currently Amended) The high voltage semiconductor component as claimed in claim 16, wherein said individual high voltage components are [~~semiconductor component is~~] one of [~~a~~] vertical power transistors and IGBTs [~~transistor or an IGBT~~].

31.(Currently Amended) A semiconductor chip, comprising:

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a substrate having a major surface;

a field of [~~at least one~~] high voltage semiconductor components defining a high voltage portion [~~component~~] in said substrate;

an edge structure at an edge of said high voltage portion [~~semiconductor component~~]t, said edge structure separating said [~~a~~] high voltage portion of said substrate from an edge of said major surface [~~a low voltage portion~~] of said substrate, said edge structure including:

at least one inner zone of a first conductivity type defining a ring structure around said field of [~~at least one~~] high voltage semiconductor components [~~component~~] at said major surface;

at least one floating guard ring [~~rings~~] of a second conductivity type arranged in said at least one inner zone; and

at least one inter-ring zone [~~zones~~] of said first conductivity type arranged in said at least one inner zone, said at least one inter-ring zone [~~zones~~] being adjacent to [~~allocated in pairs to each of~~] said at least one floating guard ring [~~rings, said inter-ring zones being arranged laterally so as to separate two respective consecutive floating guard rings from one another~~],

at least one of said at least one inter-ring zone [~~zones~~] and said at least one floating guard ring [~~rings~~] being of a at least one of a conductivity and a geometry such that their free charge carriers are totally depleted when a blocking voltage is applied.

Cont'd D1

32.(Currently Amended) A semiconductor chip, comprising:

a substrate having a major surface;

a plurality of high voltage vertical MOSFET [~~semiconductor~~] components in said substrate;

an edge structure at an edge of said plurality of high voltage vertical MOSFET [~~semiconductor~~] components to separate said high voltage vertical MOSFET [~~semiconductor~~] components from a remainder of said substrate, said edge structure including:

at least one inner zone of a first conductivity type defining a ring structure around said plurality of high voltage semiconductor components at said major surface;

at least one floating guard ring of a second conductivity type arranged in said at least one inner zone; and

an inter-ring zone [~~zones~~] of said first conductivity type arranged in said at least one inner zone, said inter-ring zone [~~zones~~] being allocated [~~in pairs~~] to [~~each of~~] said at least one floating guard ring, [~~said inter-ring zones being arranged laterally so as to separate two respective consecutive floating guard rings from one another,~~]

Cont'd D1

at least one of said inter-ring zone [~~zones~~] and said at least one floating guard ring being of [~~a~~] at least one of a conductivity and a geometry such that their free charge carriers are totally depleted when a blocking voltage is applied.